

sink device 400. In other examples, the heat sink 504 and the Peltier device 404 may be supported at other sides of the heat sink device 400.

The heat sink device 400 also includes one or more fans 506 (e.g., a fan). The fan 506 may be any number of types of fans. In one example, the fan 506 is an axial fan. Other types of fans may be provided. The fan 506 may be any number of sizes. The size of the fan 506 may be set based on a maximum power of the Peltier device 404 or a maximum amount of heat to be dissipated by the heat sink device 400. In the example shown in FIG. 5, the fan 506 is supported at or adjacent to the top 408 and/or one or more of the sides 410 of the housing 402. For example, the fan 506 is physically connected to the housing 402, adjacent to the top 408 of the housing 402 with one or more connectors 508 (e.g., screws, nut/bolt combinations, tapped recesses). In other examples, the fan 506 is physically connected to other portions of the housing 402 (e.g., the bottom 500 of the housing 402). The fan 506 is aligned with a portion of the heat sink 504 (e.g., fins of the heat sink 504) and/or with one or more outlet vents 510 through the housing 402 of the heat sink device 400. Cooling air is pulled into the housing 402 through inlet vents 512 by the fan 506, and the cooling air is pushed through the heat sink 504 (e.g., the fins of the heat sink 504) and out of the outlet vents 510 through the housing 402. In one example, a speed of the fan 506 is controlled by a processor of the heat sink device 400 (not shown) or a processor of a computing device supported by and in communication with the heat sink device 400. In another example, the speed of the fan 506 is set to one speed and remains at the speed while powered on.

FIG. 6 depicts detail B of the example of the heat sink device 400 of FIG. 5. The Peltier device 404 includes a top 600, a bottom 602, and at least one side 604 extending between the top 600 and the bottom 602. The Peltier device 404 may be any number of shapes including, for example, square or rectangular. The top 600 of the Peltier device 404 may be exposed. Alternatively, the top 600 of the Peltier device 404 may be covered by one or more layers of material. For example, one or more layers of a no residue thermal interface material may be applied to the top 600 of the Peltier device 404.

The Peltier device 404 extends above the top 408 of the heat sink device 400. The Peltier device 404 is maintained in the raised position relative to the top 408 of the heat sink device 400 with the heat sink 504. In the example shown in FIGS. 4-6, the heat sink 504 is a spring-loaded heat sink. The heat sink 504 may be physically connected to a part of the heat sink device 400 with one or more connectors 606 (e.g., four screws or bolts) about which springs 608 are wrapped. When the connectors 606 are tightened into the part of the heat sink device 400 (e.g., one or more tapped recesses in the heat sink device 400) and thus onto the springs 608, the springs 608 press against extensions of the heat sink 504 (e.g., bosses or flanges 610). The springs 608 thus press the heat sink 504 against the part of the heat sink device 400. The spring loading of the heat sink 504 may take other forms.

The spring loading of the heat sink 504 presses a surface 611 (e.g., a bottom) of the heat sink 504 against the bottom 602 of the Peltier device 404, pushing the Peltier device 404 through the opening 502 through the top 408 of the heat sink device 400. The contact between the heat sink 504 and the Peltier device 404 keeps the Peltier device 404 in position while also allowing the Peltier device 404 to move relative to the top 408 of the heat sink device 400 when a force is applied to the Peltier device 404 (e.g., during docking of a

computing device with the heat sink device 400). The movement of the Peltier device 404 relative to the top 408 of the heat sink device 400 reduces forces on the computing device during docking.

As shown in the example of FIG. 6, the heat sink device 400 also includes a transceiver module 612. The transceiver module 612 may be any number of different types of transceivers including, for example, an optical transceiver, an RF transceiver, or another type of transceiver. At least part of the transceiver module 612 extends through an opening 614 through, for example, the top 408 of the heat sink device 400. The transceiver module 612 may be located in other positions within the housing 402 of the heat sink device 400. The transceiver module 612 may be supported by the housing 402 of the heat sink device 400 in any number of ways including, for example, with an adhesive.

The part of the transceiver module 612 that extends through the opening 614 through the top 408 of the heat sink device 400 is, for example, a protrusion 616 (e.g., a pin) used to locate the computing device on the heat sink device 400. The protrusion 616 may provide a communications function (e.g., an electrical connection) in addition to the locating function. Alternatively, the protrusion 616 may only provide the locating function. For example, the transceiver module 612 may be an optical transceiver module, and the protrusion 616 may be a clear plastic part through which optical signals may be transmitted.

Signals received from the computing device via the transceiver module 612 may be transmitted to a processor of the heat sink device 400 (not shown) for processing, to the fan 506 for control, to the Peltier device 404 for control, or may be transmitted to a device external of the heat sink device 400. For example, signals received from the computing device via the transceiver module may be transmitted to an external display for processing and display of data. The signals received from the computing device via the transceiver module 612 may be transmitted via wire or wirelessly.

FIG. 7 depicts a bottom view of the example of the heat sink device 400 of FIG. 4 with the bottom 500 removed. FIG. 7 shows the fan 506 and the heat sink 504. The heat sink 504 includes a plurality of fins 700 through which air is pulled or pushed by the fan 506. The plurality of fins 700 may be any number of sizes and shapes. For example, the plurality of fins 700 include rectangular fins and/or pin fins. The plurality of fins 700 may be uniform in shape and/or size or may vary in shape and/or size. The fan 506 may be powered from a power source inside the heat sink device 400 or outside the heat sink device 400. For example, the fan 506 may be powered by batteries or a power supply unit included within the heat sink device 400, or via a cable connected to a power source outside the heat sink device 400.

The heat sink device 400 also includes one or more magnets 702 positioned at or adjacent to the top 408, the bottom 500, and/or the at least one third side 410 of the heat sink device 400. In the example shown in FIG. 7, the heat sink device 400 includes two magnets 702 (one magnet visible in FIG. 7), positioned adjacent to the top 408 of the heat sink device 400. The magnets 702 may be physically attached to an internal surface 704 of the heat sink device 400 in any number of ways including, for example, with an adhesive. The respective positions of the magnets 702 may correspond to relative positions of magnets within computing devices to be supported and cooled by the heat sink device 400. For example, a distance between the magnets 702 may be the same as a distance between magnets of the mobile phone 202, for example.